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ABSTRACT

This paper explores the relationship of developmental advising and frequency of faculty-student contact to college students' cognitive growth. The study involved freshmen at two metropolitan Atlanta (Georgia) women's colleges: Agnes Scott College and Brenau College. Brenau freshmen participate in a two-quarter seminar which includes academic advising. At Agnes Scott College, advising groups meet occasionally, and individual conferences are held. The Watson-Glaser Critical Thinking Appraisal was completed by the freshmen as a pretest. In the spring, the Watson-Glaser was administered again, and the Academic Advising Inventory was administered to measure advisor style and frequency of faculty-student contact for advising purposes. Multiple regression investigated the variance in pre- and post-test Watson-Glaser scores explained by scores on the advising inventory and by frequency of contact. Quite high levels of developmental advising were revealed at both colleges. Significant variance in cognitive growth scores explained by advising style was found on two scales of the Watson-Glaser at Agnes Scott College, but not at Brenau. No sgnificant results were detected between frequency of contact and developmental advising at either institution. The paper concludes with recommendations for planning advising programs, future research topics, and 11 references. (JDD)

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ACADEMIC ADVISING AND COGNITIVE DEVELOPMENT: IS THERE A LINK?

by

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Presented at the Thirteenth Annual Conference of the
National Academic Advising Association
Houston, Texas
October 15, 1989

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Academic Advising and Cognitive Development:
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Good morning and welcome. I will talk with you this morning about research on the relationship of developmental advising and the frequency of faculty-student contact to college student's cognitive growth. I am Director of Institutional Research and a member of the mathematics faculty at Brenau College in Gainesville, Georgia. For four years I directed the freshman year experience program at Brenau and had responsibility for freshman advising. Brenau is a private four-year institution which has a woman's college as one of its components. Last summer I received my doctorate from the University of Georgia. NACADA funded my dissertation research through a 1988 research grant. Let me say that I am grateful for the support - both financial and moral!

To begin any study of the influence of developmental advising on college students it is first necessary to have a good understanding of the construct. Let's take a look at some important definitions. **TRANSPARENCY 2** Crookston detailed the definition of developmental advising in 1972. He views the university as an intellectual learning center where developmental tasks are used for personal growth. Advising in this environment is a negotiated agreement between the student and the advisor which focuses on the student's potentialities and increasing self direction.

Ender, Winston, and Miller (1982) later refined the definition. They describe developmental advising as a relationship which stimulates the student's quest for an enriched quality of life. The system provides support for students as they make decisions. The cognitive and affective domains are engaged. Career and moral decisions are involved. The total student development concept is reflected.

Most recently Gordon (1988) identified developmental advising as the vehicle most likely to personalize education. She describes the developmental advisor as a mentor who creates a sense of comfort and friendliness for students while encouraging them to make educational decisions for themselves.

These definitions, which indicate that the goals and objectives of developmental advising include changing the nature and quality of the advisor-student relationship, suggest that research on positive outcomes of college is important. A few highlights worth noting:

Pascarella (1980) reviewed findings which indicate significant positive association between the extent and quality of faculty-student informal contact and student's educational aspirations, attitudes toward college, academic achievement, intellectual and personal development, and institutional persistence.

Pascarella and Terenzini (1980, 1978) found that freshmen reporting more frequent informal contact ranked higher in personal and intellectual development than students reporting less frequent contact. They also found significant correlation between faculty-student contact and freshman academic performance and self-perceived intellectual growth. From these and other studies Pascarella and Terenzini conclude that freshman year experiences are influential and list advising as a positive facet over which the institution can have control.

This examination of the relationship of developmental advising and frequency of contact to the cognitive growth of freshmen is an attempt to clarify the outcomes of a program over which the college has control- namely, academic advising. Through an empirically validated process advising can be shown to contribute to positive college outcomes.

The study was conducted over the course of the 1987-88 academic year at two woman's colleges in the metropolitan Atlanta area, Agnes Scott College in Atlanta and Brenau College in Gainesville, Georgia. All traditional-age freshmen at each college participated. The characteristics of the two classes are to some extent homogeneous: both are primarily residential, both are close to the same city, both place primary emphasis on teaching, and both are organized so that the same relatively small number of professors teach all freshmen. In other words, the experiences of freshman at Agnes Scott and at Brenau are more alike than those of a large university.

The two colleges differ in the way advising is organized. Brenau freshmen all participate in a two quarter, credit bearing seminar. Academic advising is handled within the framework of the course, which facilitates exposure to the overall academic and student development programs of the college in formal and informal settings. Developmental advising concepts are not specifically explained to advisors in their training sessions, but a major course goal is to encourage the student to accept responsibility for her own educational planning.

While Agnes Scott in committed to ongoing advisement the program is not as highly organized as at Brenau. Agnes Scott holds each student responsible for her course of study within the parameters of excellence set by the college. Advisors are assigned on the basis of stated academic preference; advising groups meet occasionally. Individual conferences are also held. As at Brenau, advisor training is not specifically developmental in nature.

TRANSPARENCY 3 During the eight month course of the study students completed three different instruments. One of these was administered twice, in two forms, as a pre and a posttest.

To control for precollege differences, information concerning age, year of high school graduation, high school grade point average, residential status, fulltime-parttime status, and parents' combined income was collected from the students before advising began. The institutions reported SAT scores for each participant. Within a few days of the beginning of the term each student completed one form of the Watson-Glaser Critical Thinking Appraisal, (Watson & Glaser, 1980) which was used as a precollege measure of cognitive growth. The students proceeded through the freshman year without intervention.

In the spring participants completed the Watson-Glaser posttest and the Academic Advising Inventory. The inventory measured the style of the advisor (prescriptive versus developmental) and the frequency of faculty-student contact for advising purposes. Multiple regression investigated the variance in Watson-Glaser posttest scores explained by scores on the advising inventory and by frequency of contact.

Pascarella (1989) defines cognitive outcomes as those measures having to do with such higher-order processes as analysis, synthesis, reasoning, logic, and knowledge comprehension. Critical thinking is often described as such a process. The Watson-Glaser Critical Thinking Appraisal, through its five subscales, Inference, Recognition of Assumptions, Deduction, Interpretation, and Evaluation of Arguments measures various aspects of critical thinking. Reviews of the test are positive. It has been described as an admirable attempt to measure a complex attribute. In reported studies of critical thinking ability, the Watson-Glaser is by far the most widely used instrument.

The Academic Advising Inventory, developed in 1984 by Roger Winston and Janet Sandor, evaluates advising programs from a theoretical prospective that allows comparison across institutions. The developmental-prescriptive scale which makes up Part 1 is based on Crookston's definition of developmental advising. It assesses the nature of the advising relationship. Part 2 measures the frequency of contact for advising purposes.

One of the most interesting outcomes of the study is the detection of quite high levels of developmental advising at both the Agnes Scott and Brenau. **TRANSPARENCY 4** The prescriptive range on Part 1 of the advising inventory is 14 to 56. Scores of 57 to 112 are in the developmental range. The Agnes Scott and Brenau means are both well within the developmental range at 70.92 and 79.02 respectively. Only 13 of 127 (10%) Agnes Scott students and 7 of 140 (5%) Brenau students reported prescriptive advising. You will also notice that the frequency of contact at Brenau, with the higher developmental score, is almost twice that of Agnes Scott. Keep in mind, though, that the Brenau students participated in an organized freshman course.

The first step in the data analysis was examination of the population on the basis of the control variables. In some cases the means and standard deviations exhibited a marked difference, so chi square tests of independence were performed on all control variables. Significant differences were found for high school grade point average, parents' combined income. and SAT scores. These differences indicated that the populations should be split for further analysis.

Hierarchical multiple regression was then used to measure the variance in Watson-Glaser scores explained by developmental advising and frequency of contact. In the regression analysis precollege differences due to high school grade point average, SAT score, and parent's combined income were removed. The other control measures lacked sufficient variability to warrant inclusion into the model.

Before we discuss findings, let me mention the limitations of the study. McMillan (1987) reports that when the Watson-Glaser is used as a pre and posttest during a period of less that a calendar year non-significant differences are likely. Despite this, the Watson-Glaser was used because it is the most common measure of postsecondary critical thinking ability. The posttest was administered at the conclusion of the advising period to minimize change occurring from reasons other than advising style.

The fact that the population was composed of women students at primarily residential colleges is also a limiting factor. Both colleges were most cooperative and indeed welcoming, as indicated by completion percentages of 62% at Agnes Scott and 84% at Brenau. The students at these colleges were also exposed to a more controlled environment for the freshman year, thereby introducing fever confounding variables.

TRANSPARENCY 5 Significant variance in cognitive growth scores explained by advising style was found on two scales of the Watson-Glaser at Agnes Scott. Analysis revealed that developmental advising accounts for 6.4% of Watson-Glaser

posttest variance on the Recognitions of Assumptions subscale and 5% of Watson-Glaser posttest variance on the Deductions subscale. These are the only two significant relationships found. No significance due to frequency of contact at either institution was revealed. What do these results mean? Lets take a look at what the scales measure.

The Recognition of Assumptions subscale of the Watson-Glaser measures the students ability to judge the validity of a series of assumptions concerning everyday problems and life situations. The Deductions subscale measures the student's ability to decide if conclusions necessarily follow from statements concerning life situations. The positive relationships found in scores on these two subscales and developmental advising indicate that advising activities which shift responsibility for problem solving and decision making to the student could have encouraged the detected growth. This shifting of responsibility to the student is assessed in the advising inventory by asking the student whether the advisor tells the student what the best schedule is, or if the advisor assists the student in making his or her own decision. Another item asks the student the degree to which he or she is given the solution to a difficult problem by the advisor, or whether the advisor encourages the student to make the decision. Of course the developmental goal is for decisions to be made collaboratively, or by the student independently.

Though tenuous, these positive relationships indicate that desired changes are occurring at Agnes Scott due to the advising program. Efforts on that campus to clarify advisor skills and competencies which foster such growth are recommended. These findings should then be shared with other colleges.

No statistically significant results were found at Brenau for the Watson-Glaser, and none were detected between frequency of contact and developmental advising at either institution. These results are surprising because substantial research links frequency of contact to positive outcomes. Indeed I had a vested interest in detecting this relationship because Pat Terenzini, who has pioneered work in this area, was on my dissertion committee at the University of Georgia. The extraordinarily high developmental advising scores on both campuses may contribute to insufficient variability in advising style to detect relationships. It is also possible that at these two residential teaching institutions incidences of contact are perceived as part of the overall institutional fit and not specific points of contact. Or perhaps there is no significant portion of explained variance due to developmental advising or frequency of contact and cognitive growth! We need to continue research into this area. I will address this in more detail later.

As a former advising administrator, I recognize several statistically non-significant relationships worth exploring.

TRANSPARENCY 6 Here I have depicted two such relationships that are not significant, but that might guide the innovative advising planner to refine a program by means that are neither costly or time consuming. Possible losses are minimal. Gains could be substantial.

At Brenau 1.73% of the variance of the scores on the Interpretation subscale of the Watson-Glaser is explained by developmental-prescriptive scores on the advising inventory. At Agnes Scott 2.40% of the variance on the Inference subscale is explained by developmental-prescriptive scores. These scales measure the students ability to judge whether a conclusion is logical or not, and to judge the degree of truth or falsity of conclusions drawn from observed or supposed facts. These and other non-significant relationships, when taken together, suggest that advisors should encourage activities which allow negotiation of responsibilities and collaboration to solve problems. The ultimate goal is for the student to become an independent decision maker. Advising activities which move the student to this goal and decrease dependence on the advisor are recommended. I am not suggesting that advising programs should be redesigned in most cases. But time should be provided for developmental activities to take place, and advisors should be trained in developmental techniques.

TRANSPARENCY 7 As the advising program becomes more developmental in nature, occasions for faculty-student contact should increase. At Brenau, where developmental scores are higher, students report approximately twice as many contacts for advising purposes. These results seem to indicate that planned advising contacts can enhance the developmental nature of the program.

Let's look now at a few observations resulting from the study. Considering the research results I recommend that advising planners:

Train advisors in developmental techniques
Provide opportunities for developmental activities to take place
Continually monitor, evaluate, and enhance the developmental nature of the program
Expect faculty/student contact and perceived institutional fit to increase as the advising program becomes more developmental in nature.

We have just begun to scratch the surface of advising-related research. For the field of advising to serve students more effectively, future study is essential. **TRANSPARENCY 8** Some research topics which naturally follow from this study are:

Continue to investigate the link between developmental advising and cognitive growth.

Replicate the study on campuses with more diversity in advising style and with more diverse student bodies.

Conduct a study using a prescriptively-advised control group and a developmentally-advised experimental group. Use random assignment to increase the power of the design.

Conduct a study involving a cross-section of small colleges. Use control variables to measure effects of advising style across institutions.

This study is a part of initial efforts to use empirical methods to link academic advising to cognitive outcomes and ultimately to the teaching mission of college. We are all aware of the widespread criticism of advising programs. We are also aware that the conceptual work of

Crookston, Gordon, Grites, Habley, Hardee, Miller, Winston and others has been followed by applied developmental approaches on some campuses. Quantitative testing with increasing frequency and rigor is the next logical step in the evolution of academic advising in higher education. Only when a body of knowledge on the topic has been assembled can comprehensive conclusions begin to be drawn.

References

Crookston, B. B. (1972). A development view of academic advising as teaching. Journal of College Student Personnel, 13, 12-17.

Ender, S. C., Winston, R. B., & Miller, T. K. (1982). Academic advising as student development. In R.B. Winston, Jr., T.K. Miller & S.C. Ender. Development Approaches to Academic Advising (pp. 3-18). San Francisco: Jossey-Bass

Gordon, V.N. (1988). Developmental advising. In W.R. Habley (Ed.), The Status and Future of Academic Advising (pp. 107 - 118. The American College Testing Program.

Grites, T.J. (1979). Academic advising: Getting us through the eighties. AAHE-ERIC Higher Education Research Report No. 7 Washington: American College testing Program.

McMillan, J.H., (1987). Enhancing college students; critical thinking: A review of studies. Research in Higher Education, 26(1), 3-19.

Pascarella, E.T. (1980). Student-faculty informal contact and college outcomes. Review of Educational Research, 50(4), 545-595.

Pascarella, E.T. (1989). The development of critical thinking: Does college make a difference? Journal of College Student Development, 30(1), 19-26.

Pascarella, E.T., & Terenzini, P.T. (1978). Student-faculty informal relationships and freshman year educational outcomes. Journal of Educational Research, 1978, 183-189.

Pascarella, E.T., & Terenzini, P.T. (1980). Predicting freshman persistence and voluntary dropout decisions from a theoretical model. Journal of Higher Education, 51(1), 60-75.

Watson, G. & Glaser, E.M. (1980). Watson-Glaser critical thinking appraisal. San Antonio: the Psychological Corporation.

Winston, R.B., Jr. & Sandor, J.A. (1984). Academic advising inventory. Athens, Georgia: Student Development Associates.

ACADEMIC ADVISING AND COGNITIVE DEVELOPMENT:

IS THERE A LINK ?

Definitions of Developmental Advising

Crookston (1972)

* defines developmental advising as a teaching function
* focuses on potentialities rather than limitations
* sees students as growing, maturing, and capable of self-direction

Ender, Winston, and Miller (1982)

* define developmental advising as a support system for students as they make decisions concerning their futures
* define the components of the concept as cognitive, affective, career, and moral
* see advising goals as collaboratively stated and centrally located

Gordon (1987)

* identifies advising as the vehicle most likely to personalize education
* describes the developmental advisor as a mentor
* describes the develomental situation as one in which students persist and view college as a positive experience

Instruments Used in the Study

Watson - Glaser Critical Thinking Appraisal

Five Subscales - Inference
Recognition of Assumptions
Deduction
Interpretation
Evaluation of Arguments

Two forms, A and B, were administered as pre- and posttests in Fall, 1988 and Spring, 1989

Academic Advising Inventory

Part I - 22 pairs of items on a continuous scale
Prescriptive Score (14 - 56)
Developmental Score (57 - 112)

Part II - 30 items measuring the frequency of contact for advising purposes. Three subscales of Part II are identified with developmental advising:
Personal Development and Interpersonal Relationships
Teaching Personal Responsibility
Academic Courses and Majors

Administered Spring, 1989

Information collected to control for precollege differences:

- Age
- Yr of High School Graduation
- High School GPA
- Residential/Commuting Status
- Fulltime/Parttime Status
- Parents' Combined Income
- SAT Scores (Institution-reported)

Scores on the Academic Advising Inventory

Part I - Developmental - Prescriptive Scale

	Agnes Scott	Brenau
Mean	70.92	79.02
S.D.	14.48	14.32

Prescriptive Range: 14 - 56

Developmental Range: 57 - 112

13 of 127 Agnes Scott students reported prescriptive advising

7 of 140 Brenau students reported prescriptive advising

Part II - Faculty / Student Contact for Advising Purposes

	Agnes Scott	Brenau
Mean	31.16	60.92
S.D.	19.56	26.28

Scores indicate the number of times students have had contact with advisors

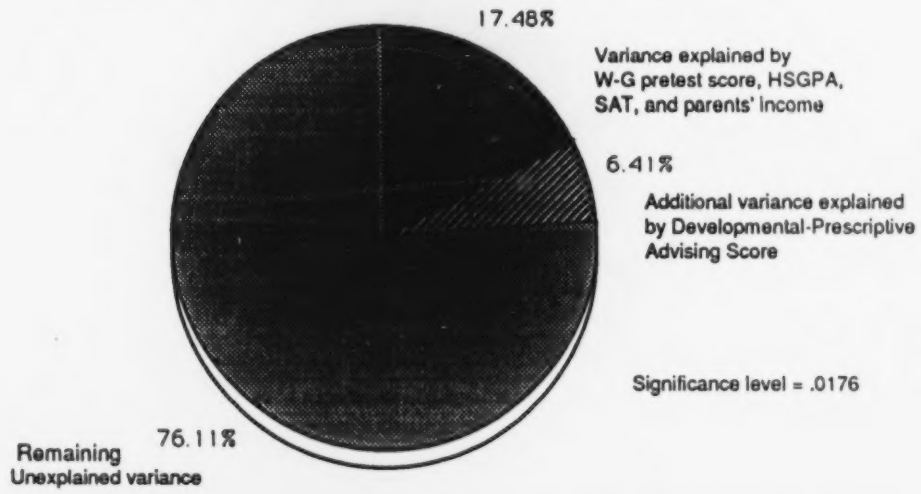
Range: 0 - 150 times

Significant Relationships

Watson-Glaser Posttest Scores and Developmental-Prescriptive Scores

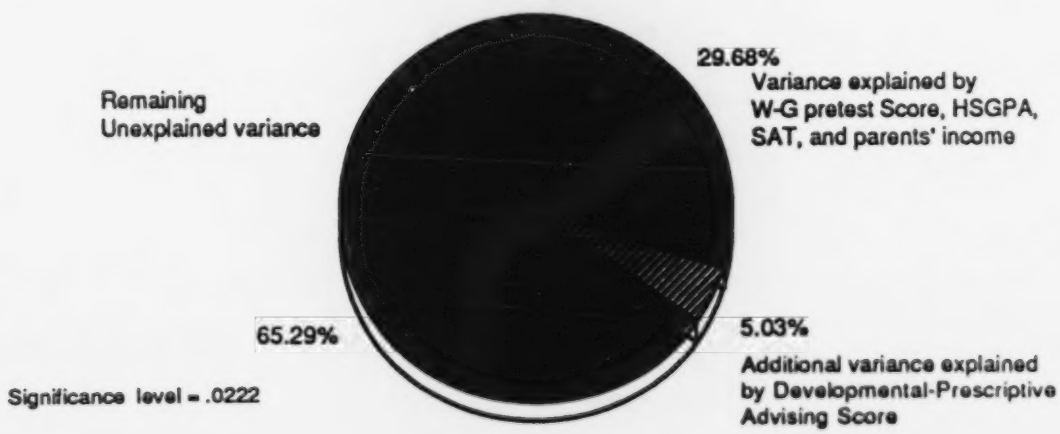
Agnes Scott

Watson-Glaser Recognition of Assumptions Subscale


17.48%
Variance explained by W-G pretest score, HSGPA, SAT, and parents' income
6.41%
Additional variance explained by Developmental-Prescriptive Advising Score
Significance level = .0176
76.11%
Remaining Unexplained variance

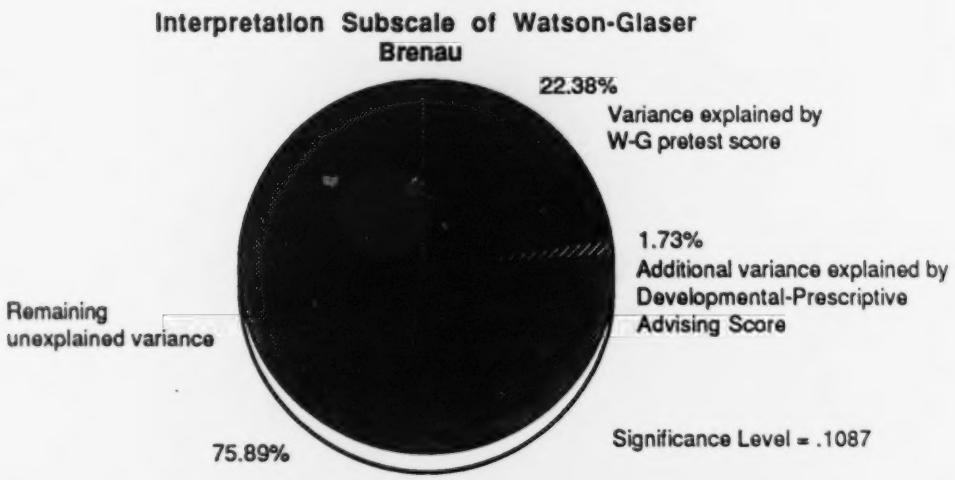
The Recognition of Assumptions subscale measures the student's ability to judge the validity of a series of assumptions concerning everyday problems and life situations.

Watson-Glaser Deductions Subscale

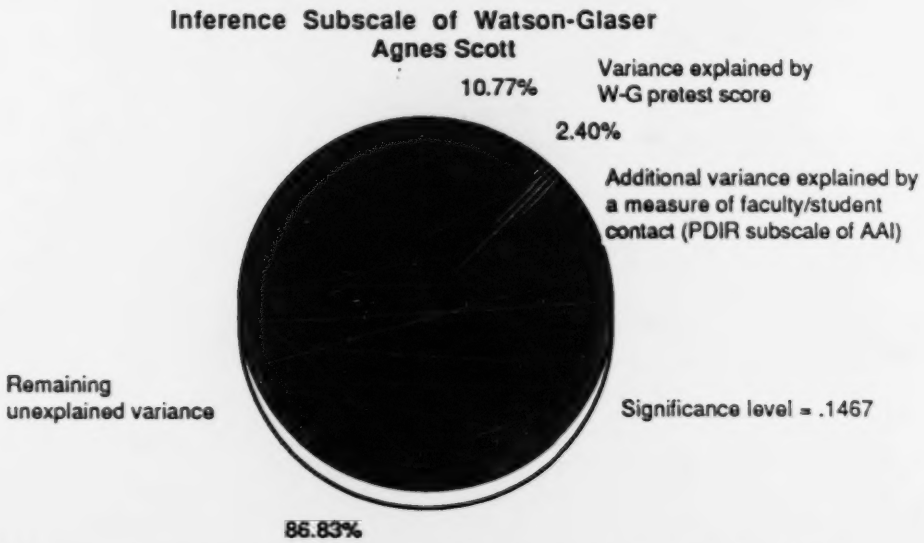

29.68%
Variance explained by W-G pretest Score, HSGPA, SAT, and parents' income
Remaining Unexplained variance
65.29%
5.03%
Additional variance explained by Developmental-Prescriptive Advising Score
Significance level = .0222

The Deductions subscale measures the student's ability to decide if conclusions necessarily follow from statements concerning life situations.

Non-Statistically Significant Relationships



The Interpretation subscale tests the student's ability to judge whether or not a conclusion logically follows a series of statements.



The Inference subscale measures the student's ability to decide the degree of truth or falsity of conclusions drawn from observed or supposed facts.

Resulting Observations

These observations indicate that activities encouraging negotiation of responsibilities and collaboration to solve problems are important.

To provide skill practice in the advising program:

* **train advisors in developmental techniques**

* **provide opportunities for developmental activities to take place**

* **continually monitor, evaluate, and enhance the developmental nature of the program**

* **expect faculty / student contact and perceived institutional fit to increase as the advising program becomes more developmental**

Suggestions for Future Study

* Continue to investigate the link between developmental advising and cognitive growth.

* Replicate the study on campuses with more diversity in advising style.

* Replicate the study on campuses with more diverse student bodies.

* Conduct a study utilizing a prescriptively-advised control group and a developmentally-advised experimental group. Use random assignment to increase the power of the design.

* Conduct a study involving a cross-section of small colleges. Use control variables to measure effects of advising style across institutions.